AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/786,079

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method for amplifying an optical signal, comprising the steps of:

providing a link fiber through which said optical signal will be transmitted;

providing a low-power semiconductor amplified spontaneous emission source for the production of optical pumping seed at a first wavelength;

providing a high-power pump source ~~such that~~ emitting light ~~to be emitted by said high-power pump source when propagating~~ at a second wavelength which propagates through said link fiber together with said optical pumping seed ~~will~~ to ensure a Raman amplification of said optical pumping seed,

~~while~~ said amplified optical pumping seed ~~will provide~~ providing Raman amplification of said optical signal [[in]] transmitted through said link fiber at a third wavelength, wherein energy is transferred from the second wavelength to the first wavelength to the third wavelength.

2. (Currently Amended) The method for amplifying an optical signal according to claim 1, wherein the ~~provided~~ semiconductor amplified spontaneous emission source ~~being~~ is optimized for Raman amplification of optical signal defined over a wide spectrum comprising the telecommunications transmission window around ~~1,55μm~~ 1.55 μm.

3. (Currently Amended) The method for amplifying an optical signal according to claim 1, ~~whereby~~ further comprising providing at least a supplementary semiconductor amplified spontaneous emission source for the production of optical pumping seed to be transmitted into said link fiber for Raman amplification of optical signal defined beyond the telecommunications C-band.

4. (Currently Amended) An optical signal amplifier comprising:

a low-power semiconductor amplified spontaneous emission source to be optically connected to a link fiber for the production of optical pumping seed at a first wavelength;

a high-power pump source to be optically connected to said link fiber and having the property to emit light to be transmitted to said link fiber at a second wavelength ensuring a Raman amplification of said optical pumping seed when propagating through said link fiber together with said optical pumping seed,

said amplified optical pumping seed being chosen to provide Raman amplification of an optical signal propagating through said link fiber at a third wavelength, wherein energy is transferred from the second wavelength to the first wavelength to the third wavelength.

5. (Currently Amended) The optical signal amplifier according to claim 4, wherein said semiconductor amplified spontaneous emission source ~~being~~ is a semiconductor optical amplifier.

6. (Original) The optical signal amplifier according to claim 5, wherein said semiconductor optical amplifier shows highest reflection coefficient on its back facet and lowest reflection coefficient on its opposite facet to be optically connected to said link fiber.

7. (Currently Amended) The optical signal amplifier according to claim 5, wherein said semiconductor optical amplifier ~~being~~ is optically connected to a single optical waveguide to be further connected to said link fiber.

8. (Currently Amended) The optical signal amplifier according to claim 4, wherein said semiconductor amplified spontaneous emission source ~~has the property to provide~~ provides a similar gain when providing Raman amplification in said link fiber on different polarized states of the optical signal.

9. (Currently Amended) The optical signal amplifier according to claim 4, ~~wherein it comprises~~ further comprising at least a supplementary semiconductor amplified spontaneous emission source to be optically connected to said link fiber and acting as source of optical pumping seed for amplification of optical signal defined beyond the telecommunications C-band.

10. (Currently Amended) The optical signal amplifier according to claim 4, wherein said high-power pump source is a Raman fiber laser adapted for a treatment of optical signal defined at least over the telecommunications transmission window around ~~1,55μm~~ 1.55μm.